

What is claimed:

1. A method for print screen tonal control compensation on a printing press, the method comprising the steps of:  
providing a test screening pattern having a plurality of predetermined screening densities including a maximum screening density;  
causing the printing press to print the test screening pattern in ink;  
measuring an ink density of at least a portion of the printed test screening pattern using a densitometric meter;  
comparing the measured ink density of the printed test screening pattern to the test screening pattern to obtain a plugging indication representative of the ink density of the printed test screening at which the printed test screening pattern exceeds that representing by a solid screening; and  
adjusting the printing press in accordance with the plugging indication.
2. The method of claim 1, wherein the maximum screening density represents a solid screening.
3. The method of claim 1, wherein the printing press prints for a particular paper and a particular ink type and wherein the step of providing a test screening pattern further comprises the step of selecting the test screening pattern in dependence upon at least one of the particular paper and the particular ink.
4. The method of claim 1, wherein the step of providing a test screening pattern further comprises the step of generating the test screening pattern on a computer.
5. The method of claim 1, wherein the compensation is undertaken a number of times.
6. The method of claim 5, wherein the compensation is undertaken until the plugging indication is not less than the maximum screening density of the test screening pattern.

7. The method of claim 1, further comprising the step of creating a density curve for each of the ink densities of the printed test screening pattern above the plugging indication, wherein the density curve represents a screening value sufficiently reduced to cause the printing press to print the test screening pattern without reaching the plugging indication prior to a solid screening of the printed test screening pattern.

8. The method of claim 1, wherein the densitometric meter is one of a photospectrometer, densitometer, or combination thereof.

9. A method of calibrating a printing press, the method comprising the steps of:  
generating a test screening pattern having a plurality of predetermined screening densities including a maximum density;

creating a printing plate to cause the printing press to print the generated test screening pattern;

printing the generated test screening pattern on the printing press;

measuring an ink density of at least a portion of the printed test screening pattern using a densitometric meter;

comparing the measured ink density of the printed test screening pattern to the generated test screening pattern to obtain a plugging indication representative of the ink density of the printed test screening at which the printed test screening pattern appears as a solid screening;

creating a density curve for each of the predetermined screening densities of the printed test screening pattern above the plugging indication, wherein the density curve represents a screening value sufficiently reduced to cause the printing press to print the test screening pattern without reaching the plugging indication; and

creating a production printing plate to cause the printing press to print the generated test screening pattern in combination with the density curve.

10. The method of claim 9, wherein the step of generating a test screening pattern further comprises the step of generating a test pattern having a plurality of screening densities including a maximum screening density representing a solid screening.

11. The method of claim 9, wherein the printing press prints for a particular paper and a particular ink type and wherein the step of generating the test screening pattern further comprises the step of generating the test screening pattern in dependence upon at least one of the particular paper and the particular ink.

12. The method of claim 9, wherein the step of generating the test screening pattern further comprises the step of generating the test screening pattern on a computer.

13. The method of claim 9, wherein the calibration is undertaken a number of times.

14. The method of claim 13, wherein the calibration is undertaken until the plugging indication is not less than the maximum screening density of the test screening pattern.

15. A method of calibrating a printing press, the method comprising the steps of:

- (a) generating a test screening pattern having a plurality of predetermined screening densities including a maximum density representing a solid screening;
- (b) creating a printing plate to cause the printing press to print the generated test screening pattern;
- (c) printing the generated test screening pattern on the printing press;
- (d) measuring an ink density of at least a portion of the printed test screening pattern using a densitometric meter;
- (e) comparing the measured density of the printed test screening pattern to the generated test screening pattern to obtain a plugging indication representative of the ink density of the printed test screening at which the printed test screening pattern appears as a solid screening;
- (f) adjusting the printing press in accordance with the plugging indication; and
- (g) repeating steps (b) through (f) if the plugging indication is less than the maximum density representing a solid screening.

16. The method of claim 15, wherein step (f) includes the step of creating a density curve for each of the predetermined screening densities of the printed test screening pattern above the plugging indication, wherein the density curve represents a screening value sufficiently reduced to cause the printing press to print the test screening pattern without reaching the plugging indication prior to a solid screening of the printed test screening pattern, and combining the density curve with the test screening pattern.

17. The method of claim 15, wherein the printing press prints for a particular paper and a particular ink type and wherein step (a) further comprises the step of generating the test screening pattern in dependence upon at least one of the particular paper and the particular ink.

18. The method of claim 15, wherein step (a) further comprises the step of generating the test screening pattern on a computer.

19. A print screen tonal control and compensation system comprising:  
a printing press adapted to print a screening pattern;  
a densitometric meter adapted to determine an ink density of at least a portion of the screening pattern; and  
a controller operatively coupled to the printing press and the densitometric meter, the controller comprising a processor and a memory operatively coupled to the processor,  
the controller being programmed to generate a test screening pattern having a plurality of screening densities including a maximum screening density representing a solid screening,  
the controller being programmed to cause the test screening pattern to be printed by the printing press,  
the controller being programmed to cause the densitometric meter to determine a maximum ink density of the printed test screening pattern,  
the controller being programmed to determine whether the maximum ink density of the printed test screening is a solid screening,  
the controller being programmed to compare the maximum ink density of the printed test screening with the maximum screening density representing a solid screening to determine a plugging indication,  
the controller being programmed to create a density curve for each screening density not less than the plugging indication, and  
the controller being programmed to apply the density curve to the test screening pattern.
20. The system of claim 19, wherein the printing press prints for a particular paper and a particular ink type and wherein the controller being programmed to generate the test screening pattern in dependence upon at least one of the particular paper and the particular ink.
21. The system of claim 19, wherein the densitometric meter is one of a photospectrometer, densitometer, or combination thereof.
22. The system of claim 19, wherein the printing press is an offset printing press.